FT NPL

11/3,K/18 (Item 18 from file: 442)
DIALOG(R)File 442:AMA Journals

00022857

Musculoskeletal Applications of Magnetic Resonance Imaging (TOPICS IN RADIOLOGY; COUNCIL REPORT)

AFFAIRS, COUNCIL ON SCIENTIFIC; BERNSTEIN, SCOTT L.; COBLE, YANK D.; ESTES, E. HARVEY; FRIEDLANDER, IRA R.; KENNEDY, WILLIAM R.; NUMANN, PATRICIA J.; SCOTT, WILLIAM C.; SKOM, JOSEPH H.; STEINHILBER, RICHARD M. ; STRONG, JACK P.; WAGNER, HENRY N.; HENDEE, WILLIAM R.; MCGIVNEY, WILLIAM T.; GREENBERG, JACK; JACOBS, LAWRENCE D.; MANCUSO, ANTHONY; MARGULIS, ALEXANDER R.; MEANEY, THOMAS F.; OLDENDORF, WILLIAM H.; POHOST, GERALD M.; SISSON, GEORGE A.; SPETZLER, ROBERT; WAGNER, HENRY N. ; HENDEE, WILLIAM R.
JAMA, The Journal of the American Medical Association
November 3, 1989; 262: 2420-24271989;

ABSTRACT: **Magnetic resonance imaging** provides superior contrast, resolution, and multiplanar **imaging** capability, allowing excellent definition of soft-tissue and bone marrow abnormalities. For these reasons, **magnetic resonance imaging** has become a major diagnostic **imaging** method for the evaluation of many musculoskeletal disorders. The applications of **magnetic resonance imaging** for musculoskeletal diagnosis are summarized and examples of common clinical situations are given. General guidelines are suggested for the musculoskeletal applications of **magnetic resonance imaging** .

SINCE its introduction to clinical practice more than 5 **years** ago, **magnetic resonance imaging** (**MRI**) has become a major tool in the diagnosis of musculoskeletal abnormalities. (Ref. 1) This may seem surprising, because cortical bone cannot be directly visualized by **MRI** . The chief advantage over other **imaging** methods is the markedly better definition of soft tissues. Other advantages include multiplanar **imaging** capability, absence of ionizing radiation, and lack of need for iodinated contrast material.

X-ray-based methods such as **computed tomography** (CT) rely on differential photon attenuation by the body following exposure to an x-ray source. In contrast, **MRI** measures radio signals that originate in hydrogen nuclei (naturally present within the body) and that...

... Fourrier acquisitions are most commonly used because of their overall efficiency in spin-echo sequences. **Three - dimensional** acquisitions have shown promise in evaluating joint disease where very thin slices without interslice gaps, high SNR, and multiplanar reformatting are advantageous. **Three - dimensional** acquisitions usually are combined with a short repetition **time** , fast-scan gradient echo-pulse sequence. The combination of **three - dimensional** acquisitions with fast scans is an **area** of intense research. Improved resolution, **contrast** , and efficiency in examination of the knee can be achieved using a specially designed fast scan with a **three - dimensional** acquisition. (Ref. 2,3)

GENERAL CONSIDERATIONS

The major strength of **MRI** is its ability to visualize soft tissues. Muscle, ligament, tendon, articular **cartilage** , fibrocartilage, bone

marrow, cortical bone, fat, fluid, and vessels all have different **magnetic resonance** characteristics that allow their distinction on **imaging** protocols designed to enhance specific contrast features. Table 1 summarizes the signal-intensity characteristics generally detect anatomically on the T 1-weighted or proton-density-weighted images.

Magnetic resonance imaging is now indicated in many musculoskeletal disorders that require a more sophisticated method of defining soft-tissue abnormalities to render an adequate diagnosis. The diagnostic capability for **MRI** in a variety of common clinical problems is summarized and compared with that of other **imaging** methods in Table 2. Specific considerations are discussed below.

JOINT DISEASE

Knee

Magnetic resonance imaging is gaining recognition as an alternative to knee arthrography and arthroscopy for many diagnostic problems...

... fractures, subchondral cysts, and avascular necrosis are miscellaneous conditions that can be seen easily on **MRI** examinations of the knee.

Dynamic images of knee movement allow the evaluation of patellar instability. Images are obtained at sequential **intervals** during knee movement and displayed in a cine loop to allow examination of knee-joint mechanics. (Ref. 40)

11/3,K/20 (Item 1 from file: 95)

01257199 F98100097969

Accuracy of cartilage volume **and thickness** measurements **with** magnetic resonance imaging

(Genauigkeit von Messungen des Knorpelvolumens und der Knorpeldicke durch Kernspintomographie)

Eckstein, F; Schnier, M; Haubner, M; Priebsch, J; Glaser, C; Englmeier, K-H ; Reiser, M

Clinical Orthopaedics and Related Research, v136, n352, pp137-148, 1998
ISSN: 0009-921X

ABSTRACT:

A noninvasive **imaging** technique for quantifying articular **cartilage** is needed for diagnosis, monitoring, and therapy control in osteoarthritis. In this study the accuracy of **three - dimensional cartilage volume** and thickness **measurements** in the knee with **magnetic resonance imaging** was analyzed. Eight cadaveric specimens had sagittal **imaging** with a fat suppressed gradient echo sequence. After a contrast agent was injected, two sagittal **computed tomography** data sets were obtained, with the knees being repositioned between the examinations. The **cartilage** thickness was determined, after **three - dimensional** reconstruction, using a minimal distance algorithm. The mean absolute volume between **magnetic resonance imaging** and **computed tomography** arthrography was 3.3 % and that between the two **computed tomography** data sets was 3.6 %. The absolute error in determining the maximal **cartilage** thickness with **magnetic resonance imaging** was on average 0.6 **intervals** (of 0.5-mm thickness) and that between the **computed tomography** examinations was 0.5 **intervals** . In a patient with anterior knee pain, a focal **cartilage**

defect was seen with **magnetic resonance imaging** , and this was verified by arthroscopic examination. Using **three - dimensional** image processing, **magnetic resonance imaging** can provide accurate data on **cartilage** volume and thickness in the human knee joint surfaces. This **imaging** technique potentially may be valuable in the treatment of patients with joint disease.

11/3,K/21 (Item 2 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

01242288 F98090207974
Relevanz suszeptibilitaetsinduzierter geometrischer Fehlkodierungen fuer die Validitaet MR **-basierter Knorpelvolumen- und -dickenmessungen im Kniegelenk**
(Relevance of susceptibility-induced geometrical distortion for the accuracy of **MR** -based **cartilage volume** and thickness **measurement**)
Schnier, M; Priebsch, J; Faber, S; Haubner, M; Glaser, C; Englmeier, K-H; Reiser, M; Eckstein, F
Biomedizinische Technik. Biomedical Engineering, v43, n9, pp243-248, 1998
Document type: journal article Language: German
ISSN: 0013-5585

DESCRIPTORS: **CARTILAGE** ; JOINT CAPSULE; KNEE; **COMPUTED TOMOGRAPHY** ; **MAGNETIC RESONANCE IMAGING** ; GRADIENT ECHO METHOD; GRADIENT FIELD; THICKNESS **MEASUREMENT** ; **VOLUME MEASUREMENT** ; ARTHROGRAPHY; MAGNETIC SUSCEPTIBILITY; ARTEFACT; DEFECT DETECTION; FEA...
IDENTIFIERS: **MR** -Tomographie; Kniegelenk; Knorpeldicke; Fehlkodierung

11/3,K/22 (Item 3 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

01218508 F98060279971
Measurement **of localized** cartilage volume **and thickness of human knee joints by computer analysis of** three - dimensional magnetic resonance **images**
(Messung von lokalisiertem Knorpel-Volumen und -Dicke bei menschlichen Kniegelenken durch die Computeranalyse dreidimensionaler **MR** -Bilder)
Kshirsagar, AA; Watson, PJ; Tyler, JA; Hall, LD
Investigative Radiology, v33, n5, pp289-299, 1998
ISSN: 0020-9996

ABSTRACT:
This work demonstrates a new method for computerized **measurement** of the dimensions (thickness and **volume**) of articular **cartilage** for any specified region of the human knee joint. **Three - dimensional magnetic resonance** (**MR**) images optimized for **cartilage** contrast have been analyzed using computerized edge-detection techniques, and the reproducibility of articular **cartilage** thickness and **volume measurements** is assessed. A fat-suppressed, **three - dimensional** SPoiled GRass **MR** sequence (45/7.5/30 degree) with total scan **time** of approximately 12 minutes was used to acquire volume images of human knee joints at...

...were made using six repeated scans for three healthy volunteers over a period of 2 **months** . The subsequent semi-automated image processing to establish total **cartilage** volume and **cartilage** thickness maps for the femur required approximately 60 minutes of operator **time** . The mean coefficient of variation for total **cartilage** volume for the six repeated scans for three volunteers was 3.8 %, and the average coefficient of variation for the user selected **cartilage** was 2.0 %. The **cartilage** thickness maps of the same knee were similar. Standard resolution **MR** images with fat-surpressed contrast lead to an objective and reproducible measurement of spatial dimension of articular **cartilage** when analyzed semi-automatically using computerized edge-detection methods.
DESCRIPTORS: **MAGNETIC RESONANCE IMAGING** ; KNEE; BOUNDARY DETECTION; IMAGE RECOGNITION; **CARTILAGE** ; **VOLUME MEASUREMENT** ; **3D IMAGINGB RU KER**

11/3,K/23 (Item 4 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

01197466 F98040289982
In vivo reproducibility of three - dimensional cartilage volume **and thickness** measurements **with** MR imaging
(In-vivo Reproduzierbarkeit der dreidimensionalen Messung von Volumen und Dicke von Knorpel mit Hilfe der Kernspintomographie)
Eckstein, F; Westhoff, J; Sittek, H; Maag, K-P; Haubner, M; Faber, S; Englmeier, K-H; Reiser, M
American Journal of Roentgenology, v170, n3, pp593-597, 1998
ISSN: 0361-803X

ABSTRACT:
Previous studies suggest that **MR imaging** is capable of providing accurate data on knee joint **cartilage** volume and thickness in vitro, but the reproducibility of these data in living subjects has...
...rigorously. The aim of the study was therefore to determine the in vivo reproducibility of **volume** and thickness **measurements** from replicated data sets, applying the **three - dimensional** (**3D**) postprocessing methods. Eight healthy volunteers were imaged six **times** at a resolution of 2 x 0.31 x 0.31 mm with a fat-suppressed fast low-angle shot **3D** sequence, the knee being repositioned in between replicated examinations. **Three - dimensional** reconstructions of the articular **cartilage** surfaces were obtained from saggital data sets, and the **cartilage** volumes were calculated. The thickness distribution was analyzed throughout the joint surfaces independent of the section orientation, using a previously validated **3D** minimal-distance algorithm. In the volunteers, the coefficient of variation for replicated **volume measurements** ranged from 1.3 % (patella) to 3.4 % (lateral tibia) and the standard deviation of the individual **cartilage** volumes ranged from +/- 16 % (lateral tibia) to +/- 22 % (femur). The intraclass correlation coefficient ranged from...

...interobserver evaluation was similar to the interscan reproducibility. The mean interscan deviation of the maximal **cartilage** thickness **interval** ranged from 0.1 to 0.3 **cartilage** thickness **intervals** (of 0.5 mm); only in rare cases did the authors record deviations greater than one thickness **interval** . **MR imaging** can be used to determine **cartilage** volume and thickness in the knee joints of living subjects with high precision, provided that a fat-suppressed gradient-echo sequence with adequate resolution and **3D** digital image processing are used.

11/3,K/24 (Item 5 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

01129154 I97090523300
Short TE MR **microscopy: accurate measurement and zonal differentiation of normal hyaline** cartilage
Freeman, DM; Bergman, G; Glover, G
Magnetic Resonance in Medicine, v38, n1, pp72-81, 1997
ISSN: 0740-3194

ABSTRACT:
The purpose of this study was to use **MR imaging** to accurately measure the thickness of hyaline **cartilage** and determine the **MR** contrast parameters for differentiation of **cartilage** zones in normal human **cartilage** samples. **Cartilage** samples were examined using **three dimensional** spin-echo **MR** microscopy at 9.4 T with a voxel size of 31*31*300 mu m. Effects of T(ind 2) signal loss, susceptibility, and partial **volume** on **measured** thickness of **cartilage** were investigated. Thickness measurements were obtained on corresponding histological sections for comparison. Optimal contrast parameters for delineation of **cartilage** zones were evaluated using magnetization transfer, inversion recovery, T(ind 1), and T(ind 2...

...as the primary source of discrepancy between the measured thickness of cortical bone and hyaline **cartilage** . Good contrast for zonal differentiation was obtained using T(ind 1) weighting. We conclude that images obtained using short TE **MR** microscopy can be used to accurately measure **cartilage** and bone thickness in human specimens, and can demonstrate zones within normal **cartilage** .

11/3,K/25 (Item 6 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

00837467 F94112161975
A three - dimensional **representation of an athletic female knee joint using** magnetic resonance imaging
(Eine dreidimensionale Darstellung des Knies einer weiblichen Athletin mittels **MRI**)
Steele, JR; Basu, A; Job, A
Medical Engineering and Physics, v16, n5, pp363-369, 1994
ISSN: 1350-4533

ABSTRACT:
...female with no history of knee joint trauma was imaged using a 0.5 T **magnetic resonance imaging** (**MRI**) unit. Twelve cross-sectional slices of the knee were scanned in each of three orthogonal planes (coronal, sagittal and axial) at slice **intervals** of 6 mm, 7 m, and 8 mm respectively. A scan plan was also generated...

...Select anatomical reference points representing cancellous and compact bone, major ligament attachment areas, and articular **cartilage** of the distal femur and proximal tibia were digitized from the processed

shadowgraphs. The processed...

...used to reconstruct the tibial and femoral shafts. Accuracy of the model was verified by **comparing** the **shape** and proportionality of the simulated tibia and femur with the **MRI** images from which the model was generated and with anatomical literature. Comparisons demonstrated that subtle...

...the complex geometry of the tibiofemoral joint could be accurately simulated using data obtained from **MRI** scans of an intact knee. Refinements of the **imaging** and digitizing procedures were proposed to provide even greater accuracy in modelling the anatomy of...

11/3,K/38 (Item 11 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01743730 SUPPLIER NUMBER: 20157524 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Popliteomeniscal fasciculi and lateral meniscal stability.
Simonian, Peter T.; Sussmann, Patrick S.; van Trommel, Michiel; Wickiewicz, Thomas L.; Warren, Russell F.
The American Journal of Sports Medicine, v25, n6, p849(5)
Nov-Dec,1997
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0363-5465

TEXT:
...through an anterior portal. Applying the force for a period of 60 seconds before each **measurement** allowed a consistent **amount** of elastic deformation to occur in the system.

Meniscal Motion Measurement

Meniscal motion was measured...lateral meniscus is closely attached to the popliteus tendon. He believed these attachments protected the **cartilage** , pulling it from between the bony structures of the knee during flexion. In 1950, Last...

...fasciculi.

Thompson et al.(9) studied the normal excursion of the lateral meniscus with a **three - dimensional** reconstruction **magnetic resonance** image model. During flexion, the posterior excursion of the medial meniscus was 5.1 mm...

11/3,K/39 (Item 12 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01724687 SUPPLIER NUMBER: 19868883 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The effect of allograft meniscal replacement on intraarticular contact area and pressures in the human knee: a biomechanical study.
Paletta, George A., Jr.; Manning, Tim; Snell, Edward; Parker, Richard; Bergfeld, John
The American Journal of Sports Medicine, v25, n5, p692(7)
Sep-Oct,1997
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0363-5465

TEXT:
...longitudinal study of total meniscectomy in athletes, reported the incidence of radiographic changes of articular **cartilage** degeneration to be 40% at 5 **years** and 89% at 15 **years** after total meniscectomy. Deterioration occurred more commonly after lateral meniscectomy. Other authors have also reported...

...matching would improve any biomechanical effect. Carpenter et al. (unpublished data, 1993) have shown that **magnetic resonance imaging** is more accurate in estimating meniscal height but less accurate in estimating anteroposterior and mediolateral size than CT or radiographs. Use of **magnetic resonance imaging** measurement techniques in conjunction with CT or radiograph sizing may be helpful in optimizing allograft...allograft meniscal replacement resulted in a significant improvement in compressive load-transmission profiles at the **time** of implantation. Because this was a " **time** -zero" study, our findings reflect only the effects at **time** of implantation of the allograft meniscus. It is uncertain if there is a continued biomechanical...

11/3,K/56 (Item 29 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01202203 SUPPLIER NUMBER: 08202059 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Musculoskeletal applications of magnetic resonance imaging . **(Topics in Radiology/Council Report)**
JAMA, The Journal of the American Medical Association, v262, n17, p2420(8) Nov 3,1989
PUBLICATION FORMAT: Magazine/Journal ISSN: 0098-7484 LANGUAGE: English
TEXT:
SINCE its introduction to clinical practice more than 5 **years** ago, **magnetic resonance imaging** (**MRI**) has become a major tool in the diagnosis of musculoskeletal abnormalities. [1] This may seem surprising, because cortical bone cannot be directly visualized by **MRI** . The chief advantage over other **imaging** methods is the markedly better definition of soft tissues. Other advantages include multiplanar **imaging** capability, absence of ionizing radiation, and lack of need for iodinated contrast material.

X-ray-based methods such as **computed tomography** (CT) rely on differential photon attenuation by the body following exposure to an x-ray source. In contrast, **MRI** measures radio signals that originate in hydrogen nuclei (naturally present within the body) and that...
...contain information concerning their chemical environment. A number of physical characteristics can be measured by **MRI** ; thus, **imaging** sequences can be designed to accentuate one or more of these characteristics. Two of the most useful characteristics in clinical diagnosis are the relaxation **times** , [T.sub.1] and [T.sub.2]. [T.sub.1] describes the interaction of excited...

...Fourtier acquisitions are most commonly used because of their overall efficiency in spin-echo sequences. **Three - dimensional** acquisitions have shown promise in evaluating joint disease where very thin slices without interslice gaps, high SNR, and multiplanar reformatting are advantageous. **Three - dimensional** acquisitions usually are combined with a short repetition **time** , fast-scan gradient echopulse sequence. The combination

of **three - dimensional** acquisitions with fast scans is an **area** of intense research. Improved resolution, **contrast** , and efficiency in examination of the knee can be achieved using a specially designed fast scan with a **three - dimensional** acquisition. [2,3]

GENERAL CONSIDERATIONS

The major strength of **MRI** is its ability to visualize soft tissues. Muscle, ligament, tendon, articular **cartilage** , fibrocartilage, bone marrow, cortical bone, fat, fluid, and vessels all have different **magnetic resonance** characteristics that allow their distinction on **imaging** protocols designed to enhance specific contrast features. Table 1 summarizes the signal-intensity characteristics generally...

JOINT DISEASE

Knee

Magnetic resonance imaging is gaining recognition as an alternative to knee arthrography and arthroscopy for many diagnostic problems...

11/3,K/57 (Item 30 from file: 149)

01196981 SUPPLIER NUMBER: 07966609 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Three - dimensional **dynamic motion analysis of the anterior cruciate ligament deficient knee joint.**

Reuben, Jeffrey D.; Rovick, Joshua S.; Schrager, Robert J.; Walker, Peter S.; Boland, Arthur L.

The American Journal of Sports Medicine, v17, n4, p463(9)
July-August,1989
PUBLICATION FORMAT: Magazine/Journal ISSN: 0363-5465 LANGUAGE: English

...and may be responsible for the meniscal degeneration that accompanies chronic ACL deficiency.

For many **years** , orthopaedic investigators have been interested in understanding the motion and ligament function of the knee...
...and Weber,(20) and others, although often contradictory, provided the foundation for current knowledge regarding **three - dimensional** knee joint motion and ligament mechanics. Further contributions by Brantigan and Voshell,(2) Kennedy et...

...manipulate a variety of loading conditions and assess the dynamic effects of these conditions in **three - dimensional** knee joint motion and ligament mechanics. Dynamic analysis easily allows the effect of an externally...

11/TI/1 (Item 1 from file: 442)

Atlas of Visual Fields - Nevus Sebaceus of Jadassohn Associated With Macro Optic Discs and Conjunctival Choristoma (ARTICLE)

11/TI/2 (Item 2 from file: 442)

A Nasal Critical-Size Defect An Experimental Model for the Evaluation of Facial Osseous Repair Techniques (ARTICLE)

11/TI/3 (Item 3 from file: 442)

Effects of Rigid Plate Fixation and Subsequent Removal on Craniofacial Growth in Rabbits (ARTICLE)

11/TI/4 (Item 4 from file: 442)

Olfactory Dysfunction in Patients With Head Trauma (ARTICLE)

11/TI/5 (Item 5 from file: 442)

Human Posterior Cricoarytenoid Muscle Compartments Anatomy and Mechanics (ARTICLE)

11/TI/6 (Item 6 from file: 442)

Nasal Reconstruction Using an Osteoconductive Collagen Gel Matrix (ARTICLE)

11/TI/7 (Item 7 from file: 442)

Pulmonary and Critical Care Medicine (ARTICLE)

11/TI/8 (Item 8 from file: 442)

Craniofacial Growth in Rabbits Effects of Midfacial Surgical Trauma and Rigid Plate Fixation (ARTICLE)

11/TI/9 (Item 9 from file: 442)

Sinus and Facial Growth After Pediatric Endoscopic Sinus Surgery (ARTICLE)

11/TI/10 (Item 10 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Functional Compartments of the Tensor Veli Palatini Muscle (ARTICLE)

11/TI/11 (Item 11 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

An Updated Pediatric Perspective on the Apert Syndrome (ARTICLE)

11/TI/12 (Item 12 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Laryngeal Airway Resistance: The Relationships of Airflow, Pressure, and Aperture (Article)

11/TI/13 (Item 13 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Circulating C1q-Binding Macromolecules and Their Relationship to Radiographic Characteristics of Laryngeal Cancer (Article)

11/TI/14 (Item 14 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Medical diagnostic ultrasound instrumentation and clinical interpretation; report of the ultrasonography task force.

11/TI/15 (Item 15 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Surgical Correction of Enophthalmos and Diplopia; A Report of 38 Cases (PAPERS READ BEFORE THE AMERICAN ACADEMY OF FACIAL PLASTIC AND RECONSTRUCTIVE SURGERY)

11/TI/16 (Item 16 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Immunohistochemical Studies of Keratin in Human Bronchus and Lung Tumors (ORIGINAL ARTICLE)

11/TI/17 (Item 17 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Thyroid Tumor Imaging (ORIGINAL ARTICLES)

11/TI/19 (Item 19 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Magnetic Resonance Imaging **of the Head and Neck Region; Present Status and Future Potential** (TOPICS IN RADIOLOGY/COUNCIL REPORT)

11/TI/26 (Item 1 from file: 98)
DIALOG(R)File 98:(c) 2003 The HW Wilson Co. All rts. reserv.

Matrix proteoglycans: from molecular design to cellular function.
AUGMENTED TITLE: review

11/TI/27 (Item 2 from file: 98)
DIALOG(R)File 98:(c) 2003 The HW Wilson Co. All rts. reserv.

Biomechanics of the knee during closed kinetic chain and open kinetic chain exercises.

11/TI/28 (Item 1 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Effects of patellar tendon adhesion to the anterior tibia on knee mechanics.

11/TI/29 (Item 2 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

The Relationship Between Obesity and Craniofacial Structure in Obstructive Sleep Apnea(*).

11/TI/30 (Item 3 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Variations in Posteroanterior Stiffness in the Thoracolumbar Spine: Preliminary Observations and Proposed Mechanisms.

11/TI/31 (Item 4 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Magnetic resonance imaging **in low back pain: general principles and clinical issues.**

11/TI/32 (Item 5 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Strategies in preserving lung health and preventing COPD and associated diseases: The National Lung Health Education Program (NLHEP).(chronic obstructive lung disease)(supplement to February 1998 issue)

11/TI/33 (Item 6 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Managing cough as a defense mechanism and as a symptom: a consensus report of the American College of Chest Physicians.

11/TI/34 (Item 7 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

The anterior horn of the medial meniscus: an anatomic study of its insertion.

11/TI/35 (Item 8 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Evaluation and treatment of posterior cruciate ligament injuries. (Current Concepts)

11/TI/36 (Item 9 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Lumbar spine stenosis: a common cause of back and leg pain.(includes patient information)

11/TI/37 (Item 10 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

3 - D imaging : **basic concepts for radiologic technologists. (Continuing Education, with test)**

11/TI/40 (Item 13 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Arthroscopic repairs of triangular fibrocartilage complex tears. (Home Study Program article; includes examination, answer sheet and learner evaluation)

11/TI/41 (Item 14 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Magnetization transfer in magnetic resonance imaging .

11/TI/42 (Item 15 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

The relationship between symptoms and abnormal magnetic resonance **images of lumbar intervertebral disks.**

11/TI/43 (Item 16 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Virtual bronchoscopy: relationships of virtual reality endobronchial simulations to actual bronchoscopic findings.

11/TI/44 (Item 17 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Young people with cancer: a handbook for parents.(Pamphlet)

11/TI/45 (Item 18 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Excursion of the rotator cuff under the acromion: patterns of subacromial contact.

11/TI/46 (Item 19 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Prospective study of osseous, articular, and meniscal lesions in recent anterior cruciate ligament tears by magnetic resonance imaging **and arthroscopy.**

11/TI/47 (Item 20 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Cell survival after transplantation of fresh meniscal allografts: DNA probe analysis in a goat model.

11/TI/48 (Item 21 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Magnetic resonance imaging **of injury to the lateral ankle ligaments.**

11/TI/49 (Item 22 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Detection and treatment of testicular cancer.

11/TI/50 (Item 23 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Evaluation of soft foot orthotics in the treatment of patellofemoral pain syndrome. (includes commentary and author response)

11/TI/51 (Item 24 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Tracheobronchiomegaly: the Mounier-Kuhn syndrome in a patient with the Kenny-Caffey syndrome.

11/TI/52 (Item 25 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Venus' flytrap - cancer and AIDS fighter of the future? (On the Horizon)

11/TI/53 (Item 26 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Pectus excavatum. (pathophysiology, clinical presentation, surgical repair)

11/TI/54 (Item 27 from file: 149)

Overview of osteoporosis.

11/TI/55 (Item 28 from file: 149)

Interpreting office radiographs: a guide to systematic evaluation.

11/TI/58 (Item 31 from file: 149)

Magnetic resonance imaging **of the head and neck region; present status and future potential. (Topics in Radiology-Council Report)**

11/TI/59 (Item 32 from file: 149)

Gordon Research Conferences. (Summer, 1986)

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